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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,125	11/21/2005	Jorg Heller	STERN21.003APC	8936
20995	7590	08/03/2007	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			WONG, EDNA	
2040 MAIN STREET			ART UNIT	PAPER NUMBER
FOURTEENTH FLOOR			1753	
IRVINE, CA 92614				
		NOTIFICATION DATE	DELIVERY MODE	
		08/03/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b><i>Office Action Summary</i></b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/528,125	HELLER ET AL.
<b>Examiner</b>	<b>Art Unit</b>	
Edna Wong	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## ***Office Action Summary***

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 20 July 2007.

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)  Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 1-18 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All   b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892) 4)  Interview Summary (PTO-413)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date. \_\_\_\_ .  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date . 5)  Notice of Informal Patent Application  
6)  Other: \_\_\_\_ .

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 20, 2007 has been entered.

***Response to Amendment***

This is in response to the Amendment dated July 20, 2007. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

**Claim Objections**

Claims 1, 4-5 and 9 have been objected to because of minor informalities.

The objection of claims 1, 4-5 and 9 has been withdrawn in view of Applicants' amendment.

**Claim Rejections - 35 USC § 103**

Claims 1-18 have been rejected under 35 U.S.C. 103(a) as being unpatentable over **DE 198 55 666** ('666) and **Lehmkuhl et al.** (US Patent No. 6,652,730 B1) in

combination with Dotzer et al. (US Patent No. 3,969,195).

The rejection of claims 1-18 under 35 U.S.C. 103(a) as being unpatentable over DE 198 55 666 ('666) and Lehmkuhl et al. in combination with Dotzer et al. has been withdrawn in view of Applicants' amendment.

***Response to Amendment***

***Claim Objections***

Claim 1 is objected to because of the following informalities:

**Claim 1**

line 4, the word -- an -- should be inserted after the word "comprising".

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

**Claim 1**

line 3, recites a "zinc/magnesium alloy".

Applicants' specification, pages 1-7, does not mention using a zinc/magnesium alloy. Thus, there is insufficient written description to inform a skilled artisan that applicant was in possession of the claimed invention as a whole at the time the application was filed.

The Examiner has carefully considered the entire specification as originally filed, however, there is found no literal support in the specification for the newly added limitation in amended claim 1.

line 4, recites "a halogen-free electrolyte bath".

Applicants' specification, pages 1-7, does not mention a halogen-free electrolyte. Thus, there is insufficient written description to inform a skilled artisan that applicant was in possession of the claimed invention as a whole at the time the application was filed.

However, Applicants does mention a halogen-free, aprotic solvent (page 4, [0009]). The solvent is not the same as the bath.

The Examiner has carefully considered the entire specification as originally filed, however, there is found no literal support in the specification for the newly added limitation in amended claim 1.

#### ***Claim Rejections - 35 USC § 103***

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over

**Dotzer et al.** (US Patent No. 3,969,195) in combination with **DE 198 55 666** ('666) and **Lehmkuhl et al.** (US Patent No. 6,652,730 B1).

*Lehmkuhl is an English equivalent of DE '666.*

Dotzer teaches a method for electrolytic coating of a material (= articles made of ferrous, non-ferrous and light metals and alloys thereof) [col. 3, lines 24-30; and abstract] with aluminum, magnesium or alloys of aluminum and magnesium (= an aluminum coating) [col. 1, lines 11-13; col. 3, lines 31-35; and col. 13, Example 3], said method comprising:

(a) immersion an aluminum/magnesium alloy or zinc/magnesium alloy material (= articles made of ferrous, non-ferrous and light metals and alloys thereof, e.g., aluminum, beryllium, magnesium, molybdenum, steel, tantalum, titanium, tungsten, vanadium and zinc and their alloys) [abstract] into a halogen-free electrolyte bath comprising an electrolyte (= lowered into an 100°C aluminizing bath) [col. 13, lines 35-39], wherein said material is electrically connected as an anode therein (= from the anode polarity) [col. 13, lines 40-45], and anodically charging the material (= from the anode polarity) [col. 13, lines 40-45]; and

(b) reversing polarity of the material (= a cathode/anode polarity reversal) [col. 13, lines 40-45], thereby

(c) performing electrolytic coating (= an electro-aluminum coating) [col. 13, lines 27-28] in the same electrolyte (= lowered into the 100°C aluminizing bath) [col. 13, lines 35-39], the electrolytic bath further comprising organoaluminum compounds (col. 7, line

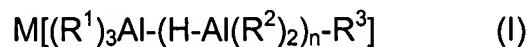
55 to col. 8, line 6) and a halogen-free, aprotic solvent being used as solvent for the electrolyte (col. 8, lines 6-14).

The electrolytic coating is performed at temperatures of from 80 to 105°C (= 100°C) [col. 13, line 36].

The electrolytic coating is performed at temperatures of from 91 to 100°C (= 100°C) [col. 13, line 36].

The method of Dotzer differs from the instant invention because Dotzer does not disclose the following:

a. Wherein the organoaluminum compounds are organoaluminum compounds of general formulas (I) and (II):



as electrolyte, wherein n is equal to 0 or 1, M is sodium or potassium, and R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> can be the same or different, R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup> being a C<sub>1</sub>-C<sub>4</sub> alkyl group, as recited in claim 1.

b. Wherein a mixture of the complexes K[AlEt<sub>4</sub>], Na[AlEt<sub>4</sub>] and AlEt<sub>3</sub> is employed as electrolyte, as recited in claim 2.

c. Wherein a molar ratio of said complexes K[AlEt<sub>4</sub>], Na[AlEt<sub>4</sub>] to AlEt<sub>3</sub> is from 1:0.5 to 1:3, as recited in claim 3.

d. Wherein 0 to 25 mole% Na[AlEt<sub>4</sub>] is employed, relative to the mixture of

the complexes  $K[AlEt_4]$  and  $Na[AlEt_4]$ , as recited in claim 4.

e. Wherein a mixture of 0.8 mol  $K[AlEt_4]$ , 0.2 mol  $Na[AlEt_4]$ , 2.0 mol  $AlEt_3$  in 3.3 mol toluene is used as electrolyte bath, as recited in claim 5.

f. Wherein the molar ratio of said complexes  $K[AlEt_4]$ ,  $Na[AlEt_4]$  to  $AlEt_3$  is 1:2, as recited in claim 13.

g. Wherein 5 to 20 mole%  $Na[AlEt_4]$  is employed, relative to the mixture of the complexes  $K[AlEt_4]$  and  $Na[AlEt_4]$ , as recited in claim 14.

Like Dotzer, Lehmkuhl teaches electro-aluminum coating of magnesium alloys (col. 1, lines 8-13). Lehmkuhl teaches organoaluminum electrolytes comprising:

A mixture of the complexes  $K[AlEt_4]$ ,  $Na[AlEt_4]$  and  $AlEt_3$  is employed as electrolyte (col. 3, lines 13-14).

A molar ratio of said complexes  $K[AlEt_4]$ ,  $Na[AlEt_4]$  to  $AlEt_3$  is from 1:0.5 to 1:3 (col. 3, lines 13-14).

0 to 25 mole%  $Na[AlEt_4]$  is employed, relative to the mixture of the complexes  $K[AlEt_4]$  and  $Na[AlEt_4]$  (col. 3, lines 2-5).

A mixture of 0.8 mol  $K[AlEt_4]$ , 0.2 mol  $Na[AlEt_4]$ , 2.0 mol  $AlEt_3$  in 3.3 mol toluene is used as electrolyte bath (col. 3, lines 2-5).

The molar ratio of said complexes  $K[AlEt_4]$ ,  $Na[AlEt_4]$  to  $AlEt_3$  is 1:2 (col. 3, lines 1-2).

5 to 20 mole%  $Na[AlEt_4]$  is employed, relative to the mixture of the complexes  $K[AlEt_4]$  and  $Na[AlEt_4]$  (col. 3, lines 2-5).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the electrolyte described by Dotzer with (a) to (g) from above because from such mixtures, there would have been no crystallization even upon extended standing at room temperature, and the specific conductivity at 95°C is 13.8 mS/cm (col. 3, lines 14-17); and the addition of at least 0.3-0.5 mol of triethylaluminum would have been necessary to avoid deposition of alkali metal during the electrolysis as taught by Lehmkuhl (col. 3, 18-20).

Furthermore, it has been held that the selection of a known material based on its suitability for its intended use supports a *prima facie* obviousness determination (MPEP § 2144.06 and § 2144.07)

h. Wherein a mixture of  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$  and  $\text{Na}[\text{AlEt}_3]$  and  $\text{AlEt}_3$  is used as electrolyte, as recited in claim 6.

i. Wherein a molar ratio of  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$  to  $\text{Na}[\text{AlEt}_4]$  is from 4:1 to 1:1, as recited in claim 7.

j. Wherein a molar ratio of  $\text{Na}[\text{AlEt}_4]$  to  $\text{AlEt}_3$  is 1:2, as recited in claim 8.

k. Wherein a mixture of 1 mol  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$ , 0.5 mol  $\text{Na}[\text{AlEt}_4]$  and 1 mol  $\text{AlEt}_3$  in 3 mol toluene is used as electrolyte bath, as recited in claim 9.

l. Wherein the molar ratio of  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$  to  $\text{Na}[\text{AlEt}_4]$  is 2:1, as recited in claim 15.

Like Dotzer, Lehmkuhl teaches electro-aluminum coating of magnesium alloys

(col. 1, lines 8-13). Lehmkuhl teaches organoaluminum electrolytes comprising:

A mixture of  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$  and  $\text{Na}[\text{AlEt}_3]$  and  $\text{AlEt}_3$  is used as electrolyte (col. 3, lines 32-33).

A molar ratio of  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$  to  $\text{Na}[\text{AlEt}_4]$  is from 4:1 to 1:1 (col. 3, lines 36-39).

A molar ratio of  $\text{Na}[\text{AlEt}_4]$  to  $\text{AlEt}_3$  is 1:2 (col. 4, lines 14-16).

A mixture of 1 mol  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$ , 0.5 mol  $\text{Na}[\text{AlEt}_4]$  and 1 mol  $\text{AlEt}_3$  in 3 mol toluene is used as electrolyte bath (col. 4, lines 16-18).

The molar ratio of said complexes  $\text{K}[\text{AlEt}_4]$ ,  $\text{Na}[\text{AlEt}_4]$  to  $\text{AlEt}_3$  is 1:2 (col. 3, lines 1-2).

The molar ratio of  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$  to  $\text{Na}[\text{AlEt}_4]$  is 2:1 (col. 3, lines 36-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the electrolyte described by Dotzer with (h) to (l) from above because from such mixtures, there would have been no crystallization from this electrolyte solution which would interfere with the technical applicability of the electrolyte, and the specific conductivity at 95°C is 8.12 mS/cm (col. 34, lines 18-22). During electrolysis,  $\text{Na}[\text{AlEt}_4]$  would have dissolved aluminum anodes (col. 3, lines 52-55); and electrolytes of composition  $\text{Na}[\text{Et}_3\text{Al}-\text{H}-\text{AlEt}_3]$ , as solutions in toluene would have been very highly suitable for the electrolytic deposition and dissolution of aluminum at 90-105°C as taught by Lehmkuhl (col. 3, lines 56-60).

Furthermore, it has been held that the selection of a known material based on its

suitability for its intended use supports a *prima facie* obviousness determination (MPEP § 2144.06 and § 2144.07)

m. Wherein the electrolyte is for pretreatment, as recited in claim 1.

The invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by the Applicants. *In re Linter* 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon* 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), *cert. denied*, 500 US 904 (1991); and MPEP § 2144.

n. Wherein the pretreatment is performed for a period of from 1 to 20 minutes, as recited in claim 11.

o. Wherein the pretreatment is performed for a period of from 5 to 15 minutes, as recited in claim 17.

Dotzer teaches that the current source is a pulse generator which, at a cathode/anode polarity reversal cycle of 4:1 (rectified value of cathode current, 12A; of the anode current, 3 A) and 50 Hz deposition frequency, at about  $\pm$  5 V deposition voltage (amplitude height), applies an average current density of about 15 mA/cm<sup>2</sup> to the objects to be aluminized. In two hours of plating time, a silver-bright, pore-free and

tightly adhering galvano-aluminum coating about 30 microns thick is obtained on the cylinder surface (col. 13, lines 39-48).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the pretreatment (or anodically charging) described by Dotzer with wherein the pretreatment is performed for a period of from 1 to 20 minutes; and wherein the pretreatment is performed for a period of from 5 to 15 minutes because the pretreatment period is a result-effective variable and one skilled in the art has the skill to calculate the pretreatment period that would have determined the success of the desired reaction to occur, e.g., the plating time and the coating thickness (MPEP § 2141.03 and § 2144.05(II)(B)).

p: Wherein pretreatment is performed at an anodic load of the material with a current density of from 0.2 to 2 A/dm<sup>2</sup>, as recited in claim 12.

q. Wherein pretreatment is performed at an anodic load of the material with a current density of from 0.5 to 1.5 A/dm<sup>2</sup>, as recited in claim 18.

Dotzer teaches an anode current of 3 A (col. 13, line 42).

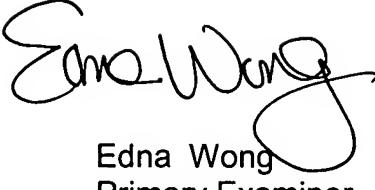
It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the pretreatment (or anodically charging) described by Dotzer with wherein pretreatment is performed at an anodic load of the material with a current density of from 0.2 to 2 A/dm<sup>2</sup>; and wherein pretreatment is performed at an anodic load of the material with a current density of from 0.5 to 1.5

A/dm<sup>2</sup> because a *prima facie* case of obviousness exists where claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (MPEP § 2144.05(I)).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edna Wong whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Edna Wong  
Primary Examiner  
Art Unit 1753

EW  
July 30, 2007